

**INFORMATION TO OFFERORS OR QUOTERS
SECTION A - COVER SHEET**

1. SOLICITATION NUMBER

2. (X one)

N00173-99-R-KK02

☐ a. SEALED BID

☒ b. NEGOTIATED (RFP)

☐ c. NEGOTIATED (RFQ)

INSTRUCTIONS

NOTE THE AFFIRMATIVE ACTION REQUIREMENT OF THE EQUAL OPPORTUNITY CLAUSE WHICH MAY APPLY TO THE CONTRACT RESULTING FROM THIS SOLICITATION.

You are cautioned to note the "Certification of Non-Segregated Facilities" in the solicitation. Failure to agree to the certification will render your reply nonresponsive to the terms of solicitations involving awards of contracts exceeding \$25,000 which are not exempt from the provisions of the Equal Opportunity clause.

"Fill-ins" are provided on the face and reverse of Standard Form 18 and Parts I and IV of Standard Form 33, or other solicitation documents and Sections of Table of Contents in this solicitation and should be examined for applicability.

See the provision of this solicitation entitled either "Late Bids, Modifications of Bids or Withdrawal of Bids" or "Late Proposals, Modifications of Proposals and Withdrawals of Proposals."

When submitting your reply, the envelope used must be plainly marked with the Solicitation Number, as shown above and the date and local time set forth for bid opening or receipt of proposals in the solicitation document.

If NO RESPONSE is to be submitted, detach this sheet from the solicitation, complete the information requested on reverse, fold, affix postage, and mail. NO ENVELOPE IS NECESSARY.

Replies must set forth full, accurate, and complete information as required by this solicitation (including attachments). The penalty for making false statements is prescribed in 18 U.S.C. 1001.

3. ISSUING OFFICE (Complete mailing address, including ZIP Code)

CONTRACTING OFFICER
NAVAL RESEARCH LABORATORY
ATTN: CODE 3220.KK
WASHINGTON DC 20375-5326

4. ITEMS TO BE PURCHASED (Brief description)

RADIATION HARDENING OF METAL OXISDE SILICON (MOS) TECHNOLOGY

5. PROCUREMENT INFORMATION (X and complete as applicable)

☐ a. THIS PROCUREMENT IS UNRESTRICTED

☐ b. THIS PROCUREMENT IS A 100 % SET-ASIDE FOR ONE OF THE FOLLOWING (X one). (See Section I of the Table of Contents in this solicitation for details of the set-aside.)

☒ (1) Small Business ☐ (2) Labor Surplus Area Concerns ☐ (3) Combined Small Business/Labor Area Concerns

6. ADDITIONAL INFORMATION

The Naval Research Laboratory Contracting Division issues solicitations and amendments to solicitations electronically via the Internet at the following website: <http://heron.nrl.navy.mil/contracts/home.htm>.

Any amendments to this solicitation will be posted at that website. Amendments will not be distributed by any other means. It is the responsibility of potential offerors to periodically review the website for amendments to this solicitation.

7. POINT OF CONTACT FOR INFORMATION

a. NAME (Last, First, Middle Initial)

King, Kevin M.

b. ADDRESS (Include Zip Code)

Code 3220.KK

c. TELEPHONE NUMBER (Include Area Code and Extension) (NO COLLECT CALLS) (202) 767-1495

Naval Research Laborator y
Washington, D.C. 20375-5326

8. REASONS FOR NO RESPONSE <i>(X all that apply)</i>			
<input type="checkbox"/> a. CANNOT COMPLY WITH SPECIFICATIONS		<input type="checkbox"/> b. CANNOT MEET DELIVERY REQUIREMENT	
<input type="checkbox"/> c. UNABLE TO IDENTIFY THE ITEM(S)		<input type="checkbox"/> d. DO NOT REGULARLY MANUFACTURE OR SELL THE TYPE OF ITEMS INVOLVED	
<input type="checkbox"/> e. OTHER <i>(Specify)</i>			
9. MAILING LIST INFORMATION <i>(X one)</i>			
<input type="checkbox"/> YES	<input type="checkbox"/> NO	WE DESIRE TO BE RETAINED ON THE MAILING LIST FOR FUTURE PROCUREMENT OF THE TYPE OF TIME(S) INVOLVED.	
10. RESPONDING FIRM			
a. COMPANY NAME		b. ADDRESS <i>(Include Zip Code)</i>	
c. ACTION OFFICER			
(1) Typed or Printed Name <i>(Last, First, Middle Initial)</i>	(2) Title	(3) Signature	(4) Date Signed <i>(YYMMDD)</i>

DD FORM 1707 REVERSE, MAR 90

FOLD

FOLD

FOLD

FOLD

FROM

AFFIX
STAMP
HERE

SOLICITATION NUMBER	
N00173-99-R-KK02	
DATE <i>(YYMMDD)</i>	LOCAL TIME
08 MAR 99	4:00 p.m.

TO

SOLICITATION, OFFER AND AWARD		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)		RATING DO-C9	PAGE OF 1 31 PAGES
2. CONTRACT NO.	3. SOLICITATION NO. N00173-99-R-KK02	4. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)		5. DATE ISSUED 3 FEB 1999	6. REQUISITION/PURCHASE NO.
7. ISSUED BY CONTRACTING OFFICER NAVAL RESEARCH LABORATORY ATTN: CODE 3220.KK WASHINGTON DC 20375-5326		CODE N00173	8. ADDRESS OFFER TO (If other than Item 7)		

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and 2 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in Bldg. 222, Room 115 until 1600 local time 08 MAR 99
(Hour) (Date)

CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section I, Provision No. 52.214-7 or 52.215-10. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME Kevin M. King	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) (202) 767-1495
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11. TABLE OF CONTENTS

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<input checked="" type="checkbox"/>	B	SUPPLIES OR SERVICES AND PRICES/COSTS	2	PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.			
<input checked="" type="checkbox"/>	C	DESCRIPTION/SPECS./WORK STATEMENT	3	<input checked="" type="checkbox"/>	J	LIST OF ATTACHMENTS	20
<input checked="" type="checkbox"/>	D	PACKAGING AND MARKING	3	PART IV - REPRESENTATIONS AND INSTRUCTIONS			
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OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within 60 calendar days (60 ~~calendar~~ days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52-232-8)	10 CALENDAR DAYS	20 CALENDAR DAYS	30 CALENDAR DAYS	CALENDAR DAYS
	%	%	%	%
14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated:	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

15A. NAME AND ADDRESS OF OFFEROR	CODE	FACILITY	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)
15B. TELEPHONE NO. (Include area code)	15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE		17. SIGNATURE
			18. OFFER DATE
AWARD (To be completed by Government)			

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT	21. ACCOUNTING AND APPROPRIATION
22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 253(c) ()		23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified) ITEM
24. ADMINISTERED BY (If other than Item 7)	CODE	25. PAYMENT WILL BE MADE BY CODE
26. NAME OF CONTRACTING OFFICER (Type or print)		27. UNITED STATES OF AMERICA (Signature of Contracting Officer)
		28. AWARD DATE

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

**PART I - THE SCHEDULE
SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS**

B-1 SUPPLIES/SERVICES AND COSTS

ITEM NUMBER	SUPPLIES/SERVICES	MAXIMUM ESTIMATED COST	MAXIMUM FIXED FEE	MAXIMUM ESTIMATED COST PLUS FIXED FEE
0001	The Contractor shall provide research and development in accordance with the Statement of Work, Attachment No.1	\$	\$	\$
0002	Data in accordance with Exhibit A (DD Form 1423) and Enclosure (1).	\$	\$	\$

B-2 MINIMUM AND MAXIMUM QUANTITIES

As contemplated by the clause of the solicitation entitled, "Indefinite Quantity", the minimum quantity that will be ordered by the Government during the effective period of the contract is research and development support requiring the contractor to provide a level of effort of 1040 direct labor hours.

The maximum quantity that the Government may order during the effective period of the contract is research and development support requiring the contractor to provide a level of effort of 36,400 direct labor hours.

The minimum and maximum quantities may consist of any combination of the tasks contained in the statement of work.

SECTION C

DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK**C-1 STATEMENT OF WORK**

The work and services to be performed hereunder shall be subject to the requirements and standards contained in Attachment (1), Statement of Work, with Exhibit A, Contract Data Requirements List, and all other Attachments cited in Section J, which are incorporated by reference into Section C.

C-2 REQUIREMENTS FOR ON-SITE CONTRACTORS

For those portions of the work under this contract performed at any NRL site, the contractor shall comply with the Requirements for On-Site Contractors dated 02 February 1998 which are hereby incorporated by reference. The full text is available at <http://heron.nrl.navy.mil/contracts/home.htm>.

C-3 The specific work to be carried out shall be further described in task orders issued under this contract.

**SECTION D
PACKAGING AND MARKING****D-1 PACKAGING AND MARKING**

Preservation, packaging, packing and marking of all deliverable contract line items must conform to normal commercial packing standards to assure safe delivery at destination.

**SECTION E
INSPECTION AND ACCEPTANCE****E-1 INSPECTION AND ACCEPTANCE CLAUSES INCORPORATED BY REFERENCE:****FAR CLAUSE TITLE**

52.246-9 - Inspection Of Research And Development (Short Form) (APR 1984)

DFARS CLAUSE TITLE

252.246-7000 - Material Inspection And Receiving Report (DEC 1991)

E-2 INSPECTION AND ACCEPTANCE

Inspection and acceptance of the final delivery will be accomplished by the Technical Manager (TM) or Contracting Officer Representative (COR) designated in Section G of this contract . Inspection and acceptance will be performed at the Naval Research Laboratory, Washington DC 20375-5320.

**SECTION F
DELIVERIES OR PERFORMANCE****F-1 DELIVERIES OR PERFORMANCE CLAUSES INCORPORATED BY REFERENCE:****FAR CLAUSE TITLE**

52.242-15 - Stop-Work Order (AUG 1989) - Alternate I (APR 1984)
52.247-34 - F.O.B. Destination (NOV 1991)

F-2 DELIVERIES OR PERFORMANCE

(a) The effective period of this contract during which delivery orders/task orders may be issued is from date of contract award through five years thereafter.

(b) Each delivery order/task order shall specify the period of performance.

(c) All deliverables required by Contract Line Item No. (CLIN) 0002 under each order shall be shipped FOB Destination, Naval Research Laboratory, Washington DC 20375-5320, consigned to:

Contracting Officer's Representative

*

Naval Research Laboratory

Contract Number : *

Delivery Order Number: _____

Building: *

Code: *

4555 Overlook Avenue, SW

Washington DC 20375-5320

(d) Each delivery order/task order shall specify the place of performance.

(* To be filled in at time of award)

SECTION G CONTRACT ADMINISTRATION DATA

G-1 PROCURING OFFICE REPRESENTATIVE

In order to expedite administration of this contract, the Administrative Contracting Officer (ACO) will direct inquiries to the appropriate office listed below. Please do not direct routine inquiries to the person listed in Item 20A on Standard Form 26.

Contract Matters Kevin M. King, E-mail king@contracts.nrl.navy.mil, Code 3220.KK, (202) 767-1495, DSN 297-1495, or Telecopier (202)767-6197

Security Matters- Mr. Charles Rogers, Code 1221, (202) 767-2240, DSN 297-2240

Safety Matters- Mr. Kirk J. King, Code 1240, (202) 767-2232, DSN 297 2232

Patent Matters- Mr. Thomas McDonnell, Code 3008.2, (202) 767-3427, DSN 297-3427

Release of Data- Mr. Richard L. Thompson, Code 1230 (202) 767-2541, DSN 297-2541

The ACO will forward invention disclosures and reports directly to the Associate Counsel for Patents, Code 3008.2, Naval Research Laboratory, Washington DC 20375-5320. The Associate Counsel for Patents will return the reports along with a recommendation to the Administrative Contracting Officer. The Associate Counsel for Patents will represent the Contracting Officer with regard to invention reporting matters arising under this contract.

G-2 CONTRACTING OFFICER'S REPRESENTATIVE (COR) - FUNCTIONS AND LIMITATIONS

* is hereby designated the cognizant COR who will represent the Contracting Officer in the administration of technical details within the scope of this contract and inspection and acceptance. The COR is not otherwise authorized to make any representations or commitments of any kind on behalf of the Contracting Officer or the Government. The COR does not have the authority to alter the Contractor's obligations or change the specifications in the contract. If, as a result of technical discussions, it is desirable to alter contract obligations or statements of work, a modification must be issued in writing and signed by the Contracting Officer. The COR is responsible for reviewing the bills and charges submitted by the Contractor and informing the ACO of areas where exceptions are to be taken.

(* To be filled in at time of award)

G-3 TECHNICAL DIRECTION MEMORANDUM (TDM)

- (a) For the purposes of this clause, technical direction includes the following:
 - (1) Direction to the Contractor which shifts work emphasis between work areas or tasks, requires pursuit of certain lines of inquiry, fills in details or otherwise describes work which will accomplish the objectives described in the statement of work;
 - (2) Guidelines to the Contractor which assist in interpretation of drawings, specifications or technical portions of work description.
- (b) Technical instructions must be within the scope of work stated in the contract. Technical instructions may not be used to:
 - (1) Assign additional work under the contract;
 - (2) Direct a change as defined in the contract clause entitled "Changes";
 - (3) Increase or decrease the estimated contract cost, the fixed fee, or the time required for contract performance; or
 - (4) Change any of the terms, conditions or specifications of the contract
- (c) The TDM shall be written by the Contracting Officer's Representative (COR), with the original given to the Contractor and a copy retained in the CORs file. Technical direction may be issued orally only in emergency situations. If technical direction is issued orally, a TDM must follow within two (2) working days from the date of the oral direction. Amendments, corrections, or changes to TDMs shall also be in written format and shall include all the information set forth in e. Below.
- (d) A TDM shall be considered issued when the Government deposits it in the mail, or if transmitted by other means, when it is physically delivered to the contractor.
- (e) TDMs shall include, but not be limited to, the following information:
 - (1) Date of TDM,
 - (2) Contract Number,
 - (3) Reference to the relevant portion or item in the Statement of Work,
 - (4) The specific technical direction or clarification, and
 - (5) The signature of the COR.
- (f) CORs shall retain all files containing TDMs for a period of two (2) years after the final contract completion date.
- (g) The only individual authorized in any way to amend or modify any of the terms of this contract shall be the Contracting Officer. When, in the opinion of the Contractor, any technical direction calls for effort outside the scope of the contract or inconsistent with this special provision, the Contractor shall notify the Contracting Officer in writing within ten (10) working days after its receipt.

G-4 SUBCONTRACTORS/CONSULTANTS

(a) Advance notification or requests for consent pursuant to the contract clause entitled "Subcontracts" (FAR 52.244-2) shall be directed to the cognizant administrative contracting officer (ACO).

(b) The following subcontractors/consultants have been identified in the Contractor's proposal as necessary for performance of this contract:

Subcontractor/Consultant Name

Estimated Cost

(Paragraph (b) will be included and filled in at time of award if subcontractor/consultants are proposed by the successful offeror)

G-5 NAPS 5252.232-9001 - SUBMISSION OF INVOICES (COST-REIMBURSEMENT, TIME-AND-MATERIALS, LABOR-HOUR, OR FIXED PRICE INCENTIVE (JUL 1992)

(a) "Invoice" as used in this clause includes contractor requests for interim payments using public vouchers (SF 1034) but does not include contractor requests for progress payments under fixed price incentive contracts.

(b) The Contractor shall submit invoices and any necessary supporting documentation, in an original and 4 copies, to the contract auditor at the following address:

(To be filled in at time of award)

unless delivery orders are applicable, in which case invoices will be segregated by individual order and submitted to the address specified in the order. In addition, an information copy shall be submitted to [See Section G for designated COR]. Following verification, the contract auditor will forward the invoice to the designated payment office for payment in the amount determined to be owing, in accordance with the applicable payment (and fee) clause(s) of this contract.

(c) Invoices requesting interim payments shall be submitted no more than once every two weeks, unless another time period is specified in the Payments clause of this contract. For indefinite delivery type contracts, interim payment invoices shall be submitted no more than once every two weeks for each delivery orders. There shall be a lapse of no more than 30 calendar days between performance and submission of an interim payment invoice.

(d) In addition to the information identified in the Prompt Payment clause herein, each invoice shall contain the following information, as applicable:

- (1) Contract line item number (CLIN)
- (2) Subline item number (SLIN)
- (3) Accounting Classification Reference Number(ACRN)
- (4) Payment terms
- (5) Procuring activity
- (6) Date supplies provided or services performed
- (7) Costs incurred and allowable under the contract

- (8) Vessel (e.g., ship, submarine or other craft) or system for which supply/service is provided
- (e) A DD Form 250, "Material Inspection and Receiving Report",
 - ** is required with each invoice submittal.
 - X is required only with the final invoice.
 - ** is not required.
- (f) A Certificate of Performance
 - ** shall be provided with each invoice submittal.
 - X is not required.
- (g) The Contractor's final invoice shall be identified as such, and shall list all other invoices (if any) previously tendered under this contract.
- (h) Cost of performance shall be segregated, accumulated and invoiced to the appropriate ACRN categories to the extent possible. When such segregation of costs by ACRN is not possible for invoices submitted with CLIN/SLINS with more than one ACRN, an allocation ratio shall be established in the same ratio as the obligations cited in the accounting data so that costs are allocated on a proportional basis.

G-6 INCREMENTAL FUNDING

Orders issued under this contract may be incrementally funded. Incrementally funded orders will contain a provision substantially as follows:

This order is incrementally funded pursuant to the Limitation of Funds clause, FAR 52.232-22. Funds are allotted to the order in the amount of \$ * and it is estimated that they are sufficient for performance through *.

(* To be filled in at time of award)

G-7 PAYMENT INSTRUCTIONS FOR MULTIPLE ACCOUNTING CLASSIFICATION CITATIONS (COST-REIMBURSEMENT)

The purpose of these instructions is to permit the paying office to charge the accounting classification citations in the contract in a manner that reflects the performance of the contract. These instructions do not create any obligation on the part of the Government or the contractor nor do they in any way alter any obligation created by any other provision of the contract. Invoices should be paid from available ACRNs in the following order:

- (a) ACRNs cited on the contractor's invoice.
- (b) On a proportional basis from any ACRNs assigned to funds which will cancel at the end of the current fiscal year.
- (c) The ACRN assigned to the following line of accounting:
97X4930.NH4A 000 77777 0 000173 2F 000000 N00173Z45000.
- (d) If funds appropriated in more than one fiscal year are allotted to the contract, the ACRN assigned to the oldest allotment of funds.
- (e) On a proportional basis from all ACRNs assigned to allotments of funds appropriated in a single fiscal year.

G-8 ACCOUNTING AND APPROPRIATION DATA

Each delivery order/task order will contain the accounting and appropriation data for payment under the contract.

G-9 TASK ORDER PROCEDURES FOR INDEFINITE QUANTITY CONTRACTS

The following procedure shall be followed when placing task orders under this contract:

- (a) Only properly appointed Contracting Officers employed at the Naval Research Laboratory (NRL) shall issue task orders under this contract.
- (b) A DD Form 1155 will be issued for each task order. The DD Form 1155, "Order for Supplies or Services", shall constitute the instrument for the placement of requirements under this contract.
- (c) Each task order shall be subject to FAR 52.232-20 Limitation of Cost or FAR 52.232-22 Limitation of Funds clause, as appropriate. Each task order is subject to the terms and conditions of the clause in Section H entitled, "Level of Effort Task Orders".
- (d) Prior to the issuance of a task order, the contractor will be provided with the statement of work and shall promptly submit a cost proposal for performing the work. The fixed fee shall be in the same proportion to the estimated cost for each task order as the maximum fixed fee is to the maximum estimated cost for the contract as set forth in Section B.
- (e) Task orders issued shall include, but not be limited to, the following information:
 - (1) Date of Order
 - (2) Contract Number and Task Order Number
 - (3) Accounting and Appropriation Data
 - (4) Description of the Work to be Performed
 - (5) Level of Effort
 - (6) DD Form 1423 (Contract Data Requirements List)
 - (7) Place of Performance
 - (8) Period of Performance
 - (9) Estimated Cost Plus Fixed Fee
 - (10) DD Form 254 (Contract Security Classification Specifications)
 - (11) List of Government furnished material and the estimated value thereof for each order.
- (f) The ceiling amount for each task order will be the ceiling price stated therein and may not be exceeded except when authorized by a modification to the task order.

SECTION H SPECIAL CONTRACT REQUIREMENTS

H-1 TYPE OF CONTRACT

(To be filled in at time of award)

H-2 ONR 5252.237-9705 - KEY PERSONNEL (DEC 88)

(a) The Contractor agrees to assign to the contract tasks those persons whose resumes were submitted with its proposal and who are necessary to fulfill the requirements of the contract as "key personnel". No substitutions may be made except in accordance with this clause.

(b) The Contractor understands that during the first ninety (90) days of the contract performance period, no personnel substitutions will be permitted unless these substitutions are unavoidable because of the incumbent's sudden illness, death or termination of employment. In any of these events, the Contractor shall promptly notify the Contracting Officer and provide the information described in paragraph (c) below. After the initial ninety (90) day period the Contractor must submit to the Contracting Officer all proposed substitutions, in writing, at least fifteen (15) days in advance (thirty (30) days if security clearance must be obtained) of any proposed substitution and provide the information required by paragraph (c) below.

(c) Any request for substitution must include a detailed explanation of the circumstances necessitating the proposed substitution, a resume for the proposed substitute, and any other information requested by the Contracting Officer. Any proposed substitute must have qualifications equal to or superior to the qualifications of the incumbent. The Contracting Officer or his/her authorized representative will evaluate such requests and promptly notify the Contractor of his/her approval or disapproval thereof.

(d) In the event that any of the identified key personnel cease to perform under the contract and the substitute is disapproved, the contract may be immediately terminated in accordance with the Termination clause of the contract.

The following are identified as key personnel:

(To be filled in at time of award)

H-3 LEVEL OF EFFORT TASK ORDERS

- (a) In the performance of each term form task order issued under this contract, the Contractor agrees to provide the level of effort specified in the task order and in accordance with this provision.
- (b) It is understood and agreed that the rate of direct labor hours expended each month may fluctuate in pursuit of the technical objective, provided such fluctuation does not result in the use of the total hours of effort prior to the expiration of the term of the task order. The Contractor is required to notify the Contracting Officer when 85% of the total level of effort of the task order has been expended.
- (c) If, during the term of the task order, the Contractor finds it necessary to accelerate the expenditure of direct labor under a task order to such an extent that the total hours of effort specified would be used prior to the expiration of the term, the Contractor shall notify the Contracting Officer in writing setting forth the acceleration required, the probable benefits which would result, and an offer to undertake the acceleration at no increase in the estimated cost or fixed fee together with an offer setting forth a proposed level of effort, cost breakdown, and proposed fixed-fee for continuation of the work until expiration of the term hereof. The offer shall provide that the work proposed will be subject to the terms and conditions of this contract and any additions or changes required by current law, regulations, or directives, and that the offer, with a written notice of acceptance by the Contracting Officer, shall constitute a binding contract. The Contractor shall not accelerate any effort until receipt of such written approval by the Contracting Officer. Any agreement to accelerate will be formalized by contract modification.
- (d) The Contracting Officer may, by written order, direct the Contractor to accelerate the expenditure of direct labor under a task order such that the labor hours of effort specified therein would be used prior to the expiration of the term. This order shall specify the acceleration required and the resulting revised term. The Contractor shall acknowledge this order within ten days of receipt.
- (e) If the total level of effort specified in each task order is not provided by the Contractor during the term of the task order, the Contracting Officer shall either (i) reduce the fixed fee of the task order as follows:

$$\text{Fee Reduction} = \text{Fixed Fee} \times \frac{(\text{Required LOE Hours} - \text{Expended LOE Hours})}{\text{Required LOE Hours}}$$

or (ii) subject to the provisions of the clause of this contract entitled "Limitation of Cost," require the Contractor to continue to perform the work until the total number of hours of direct labor specified in the task order shall have been expended, at no increase in the fixed fee of the task order.

(f) In the event the Government fails to fully fund the task order in a timely manner, the term of the task order may be extended accordingly with no change to cost or fee. If the Government fails to fully fund the task order, the fee will be adjusted in direct proportion to that effort which was performed.

(g) Notwithstanding any of the provisions of the above paragraphs, the Contractor may furnish labor hours up to five percent in excess of the total direct labor hours specified in the task order provided that the additional effort is furnished within the term hereof, and provided further that no increase in the estimated cost or fixed-fee is required, and no adjustment in the fixed-fee shall be made provided that the Contractor has delivered at least 95% of the level of effort specified in the task order.

(h) It is understood that the mix of labor categories provided by the Contractor under the task order, as well as the distribution of effort among those categories, may vary considerably from the initial mix and distribution of effort, which was estimated by the Government or proposed by the Contractor.

(i) Nothing herein shall be construed to alter or waive any of the rights or obligations of either party pursuant to the Clause entitled "Limitation of Costs" or "Limitation of Funds," either of which incorporated herein applies to each task order under this contract.

H-4 ONR 5252.235-9714 - REPORT PREPARATION (FEB 97)

Scientific or technical reports prepared by the Contractor and deliverable under the terms of this contract will be prepared in accordance with format requirements contained in ANSI/NISO Z39.18-1995, "Scientific and Technical Reports: Elements, Organization, and Design. "[NOTE: ANSI Z39.18 may be obtained from NISO Press Fulfillment Center, P. O. Box 338, Oxon Hill, MD. 20750-0338. Telephone 1-800-282-6476]

H-5 ON-SITE USE OF GOVERNMENT PROPERTY

It is anticipated that Government property will be used by the contractor's personnel in the performance of that portion of the contract performed on-site at the U.S. Naval Research Laboratory (NRL) including any of its field sites. Such use will be on a rent free basis and all

such property shall be considered to remain in the possession and control of the NRL for property responsibility and accountability purposes.

H-6 GOVERNMENT-FURNISHED PROPERTY

Government furnished special test equipment to be used off-site to perform the required tasks may be provided as per Attachment No. 3. From time to time, NRL scientists need to use the listed equipment to perform their research. Therefore, if the Contractor elects to use the Government Furnished Special Test Equipment, it must be placed so that the Government employees will have access to it. The equipment in Attachment No. 3 will be furnished to the contractor on a rent-free basis for use in performing the contract:

H-7 YEAR 2000 COMPLIANT INFORMATION TECHNOLOGY

This requirement applies to information technology (IT), that processes date-related information. All such IT delivered under this contract shall be Year 2000 compliant as defined at FAR 39.002.

H-8 REPRESENTATIONS AND CERTIFICATIONS

The Contractor's completed Representations, Certifications, and Other Statements of Offerors or Respondents is incorporated herein by reference in any resultant award.

PART II - CONTRACT CLAUSES

SECTION I CONTRACT CLAUSES

I-1 52.252-2 - CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.

Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>
<http://heron.nrl.navy.mil/contracts/home.htm>

a. FEDERAL ACQUISITION REGULATION CLAUSES

<u>FAR CLAUSE</u>	<u>TITLE</u>
52.202-1	- Definitions (OCT 1995)
52.203-3	- Gratuities (APR 1984)
52.203-5	- Covenant Against Contingent Fees (APR 1984)
52.203-6	- Restrictions On Subcontractor Sales To The Government (JUL 1995)
52.203-7	- Anti-Kickback Procedures (JUL 1995)
52.203-8	- Cancellation, Rescission, And Recovery Of Funds For Illegal Or Improper Activity (JAN 1997)
52.203-10	- Price Or Fee Adjustment For Illegal Or Improper Activity (JAN 1997)
52.203-12	- Limitation On Payments To Influence Certain Federal Transactions (JUN 1997)
52.204-2	- Security Requirements (AUG 1996)
52.204-4	- Printing/Copying Double-Sided On Recycled Paper (JUN 1996)
52.209-6	- Protecting The Government's Interest When Subcontracting With Contractors Debarred, Suspended, Or Proposed For Debarment (JUL 1995)
52.211-15	- Defense Priority and Allocation Requirements (SEP 1990)
52.215-2	- Audit And Records-Negotiation (AUG 1996)
52.215-8	- Order of Precedence - Uniform Contract Format (OCT 1997)
52.215-10	- Price Reduction for Defective Cost or Pricing Data (OCT 1997)
52.215-12	- Subcontractor Cost or Pricing Data (OCT 1997)
52.215-14	- Integrity of Unit Prices (OCT 1997)
52.215-15	- Pension Adjustments and Asset Reversions (DEC 1998)
52.215-17	- Waiver of Facilities Capital Cost of Money (OCT 1997) (will be included if the successful offeror does not propose facilities capital cost of money)
52.215-18	- Reversion or Adjustment of Plans for Post-retirement Benefits (PRB) Other than Pensions (OCT 1997)

- 52.215-19 - Notification of Ownership Changes (OCT 1997)
- 52.215-21 - Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data -Modifications (OCT 1997)
- 52.216-7 - Allowable Cost And Payment (APR 1998)
- 52.216-8 - Fixed-Fee (MAR 1997)
- 52.219-6 - Notice Of Total Small-Business Set-Aside (JUL 1996)
- 52.219-8 - Utilization Of Small Business Concerns (JAN 1999)
- 52.219-14 - Limitations On Subcontracting (DEC 1996)
- 52.222-1 - Notice To The Government Of Labor Disputes (FEB 1997)
- 52.222-2 - Payment For Overtime Premiums (JUL 1990) -The Use Of Overtime Is Authorized Under This Contract If The Overtime Premium Does Not Exceed "0"
- 52.222-3 - Convict Labor (AUG 1996)
- 52.222-20 - Walsh-Healy Public Contracts Act (DEC 1996)
- 52.222-21 - Prohibition of Segregated Facilities (FEB 1999)
- 52.222-26 - Equal Opportunity (FEB 1999)
- 52.222-35 - Affirmative Action For Disabled Veterans And Veterans Of The Vietnam Era (APR 1998)
- 52.222-36 - Affirmative Action For Workers With Disabilities (JUN 1998)
- 52.222-37 - Employment Reports On Disabled Veterans And Veterans Of The Vietnam Era (JAN 1999)
- 52.223-2 - Clean Air And Water (APR 1984)
- 52.223-3 - Hazardous Material Identification And Material Safety Data (JAN 1997)
- 52.223-5 - Pollution Prevention and Right-To-Know Information (APR 1998)
- 52.223-6 - Drug-Free Workplace (JAN 1997)
- 52.223-14 - Toxic Chemical Release Reporting (OCT 1996)
- 52.225-11 - Restrictions On Certain Foreign Purchases (AUG 1998)
- 52.226-1 - Utilization Of Indian Organizations And Indian-Owned Economic Enterprises (JAN 1999)
- 52.227-1 - Authorization And Consent (JUL 1995)- Alternate I (APR 1984)
- 52.227-2 - Notice And Assistance Regarding Patent And Copyright Infringement (AUG 1996)
- 52.227-10 - Filing of Patent Application- Classified Subject Matter (APR 1984)
- 52.227-11 - Patent Rights - Retention By The Contractor (Short Form) (JUN 1997)
(will be included if the successful offeror is a small business or a non-profit organization)
- 52.228-7 - Insurance - Liability To Third Persons (MAR 1996)
- 52.230-2 - Cost Accounting Standards (APR 1998)
- 52.230-3 - Disclosure And Consistency Of Cost Accounting Practices (APR 1998)
- 52.230-6 - Administration Of Cost Accounting Standards (APR 1996)
- 52.232-9 - Limitation On Withholding Of Payments (APR 1984)
- 52.232-17 - Interest (JUN 1996)
- 52.232-18 - Availability Of Funds (APR 1984)

- 52.232-20 - Limitation Of Cost (APR 1984) (Applicable when the contract or task order is fully funded)
- 52.232-22 - Limitation Of Funds (APR 1984) (Applicable when the contract or task order is not fully funded)
- 52.232-23 - Assignment Of Claims (JAN 1986) Alternate I (APR 1984)
- 52.232-25 - Prompt Payment (JUN 1997)

- 52.233-1 - Disputes (DEC 1998) - Alternate I (DEC 1991)

- 52.233-3 - Protest After Award (AUG 1996) - Alternate I (JUN 1985)
- 52.237-2 - Protection Of Government Buildings, Equipment And Vegetation (APR 1984)
- 52.237-3 - Continuity Of Services (JAN 1991)
- 52.237-10 - Identification of Uncompensated Overtime (OCT 1997)
- 52.242-1 - Notice Of Intent To Disallow Costs (APR 1984)
- 52.242-3 - Penalties For Unallowable Costs (OCT 1995)
- 52.242-4 - Certification of Final Indirect Costs (JAN 1997)
- 52.242-13 - Bankruptcy (JUL 1995)
- 52.243-2 - Changes - Cost-Reimbursement (AUG 1987) - Alternate V (APR 1984)
- 52.243-6 - Change Order Accounting (APR 1984)
- 52.243-7 - Notification Of Changes (APR 1984) fill in 30
- 52.244-2 - Subcontracts (AUG 1998) - Alternate I (AUG 1998)
- 52.244-5 - Competition In Subcontracting (DEC 1996)
- 52.244-6 - Subcontracts for Commercial Items and Commercial Components (OCT 1998)
- 52.245-5 - Government Property (Cost-Reimbursement, Time-And-Material, Or Labor-Hour Contracts) (JAN 1986) (DEVIATION)
- 52.245-9 - Use And Charges (APR 1984) (DEVIATION)
- 52.245-18 - Special Test Equipment (FEB 1993)
- 52.245-19 - Government Property Furnished "As-Is" (APR 1984)
- 52.246-23 - Limitation Of Liability (FEB 1997)
- 52.246-25 - Limitation Of Liability - Services (FEB 1997)
- 52.247-1 - Commercial Bill Of Lading Notations (APR 1984)
- 52.247-63 - Preference For U. S. Flag Carriers (JAN 1997)
- 52.249-6 - Termination (Cost-Reimbursement) (SEP 1996)
- 52.249-14 - Excusable Delays (APR 1984)
- 52.251-1 - Government Supply Sources (APR 1984)
- 52.252-6 - Authorized Deviations in Clauses (APR 1984)(fill in Defense Federal Acquisition Regulation Supplement (48 CFR Chapter 2))
- 52.253-1 - Computer Generated Forms (JAN 1991)

b. DEPARTMENT OF DEFENSE FEDERAL ACQUISITION REGULATION CLAUSES

DFARS CLAUSE TITLE

- 252.201-7000 - Contracting Officer's Representative (DEC 1991)

- 252.203-7001 - Special Prohibition On Employment (JUN 1997)
- 252.204-7000 - Disclosure of Information (DEC 1991)
- 252.204-7003 - Control Of Government Personnel Work Product (APR 1992)
- 252.204-7004 - Required Central Contractor Registration (MAR 1998)
- 252.205-7000 - Provision Of Information To Cooperative Agreement Holders (DEC 1991)
- 252.209-7000 - Acquisition From Subcontractors Subject To On-Site Inspection Under The Intermediate-Range Nuclear Forces (INF) Treaty (NOV 1995)
- 252.209-7004 - Subcontracting With Firms That Are Owned Or Controlled By The Government Of A Terrorist Country (MAR 1998)
- 252.215-7000 - Pricing Adjustments (DEC 1991)
- 252.215-7002 - Cost Estimating System Requirements (OCT 1998)
- 252.223-7001 - Hazard Warning Labels (DEC 1991)
- 252.223-7004 - Drug-Free Work Force (SEP 1988)
- 252.223-7006 - Prohibition On Storage And Disposal Of Toxic And Hazardous Materials (APR 1993)
- 252.225-7012 - Preference For Certain Domestic Commodities (JAN 1999)
- 252.225-7016 - Restriction On Acquisition Of Ball And Roller Bearings (AUG 1998)
- 252.225-7026 - Reporting Of Contract Performance Outside The United States (MAR 1998)
- 252.225-7031 - Secondary Arab Boycott Of Israel (JUN 1992)
- 252.225-7043 - Antiterrorism/Force Protection Policy For Defense Contractors Outside The United States (JUN 1998) (fill in : Naval Criminal Investigative Service (NCIS), Code 24, telephone, DSN 228-9113 or commercial (202)433-9113)
- 252.227-7000 - Non Estoppel (OCT 1966)
- 252.227-7001 - Release Of Past Infringement (AUG 1984)
- 252.227-7013 - Rights In Technical Data -- Noncommercial Items (NOV 1995)
- 252.227-7014 - Rights In Noncommercial Computer Software And Noncommercial Computer Software Documentation (JUN 1995)
- 252.227-7016 - Rights In Bids or Proposal Information (JUN 1995)
- 252.227-7019 - Validation Of Asserted Restrictions--Computer Software (JUN 1995)
- 252.227-7025 - Limitations On The Use Or Disclosure Of Government-Furnished Information Marked With Restrictive Legends (JUN 1995)
- 252.227-7026 - Deferred Delivery Of Technical Data Or Computer Software (APR 1988)
- 252.227-7027 - Deferred Ordering Of Technical Data Or Computer Software (APR 1988)
- 252.227-7030 - Technical Data--Withholding Of Payment (OCT 1988)
- 252.227-7034 - Patents--Subcontracts (APR 1984)
- 252.227-7036 - Declaration Of Technical Data Conformity (JAN 1997)
- 252.227-7037 - Validation Of Restrictive Markings On Technical Data (NOV 1995)
- 252.227-7039 - Patents--Reporting of Subject Inventions (APR 1990)
- 252.231-7000 - Supplemental Cost Principles (DEC 1991)
- 252.232-7009 - Payment By Electronic Funds Transfer (CCR) (JUN 1998)
- 252.235-7010 - Acknowledgment of Support and Disclaimer (MAY 1995)
- 252.235-7011 - Final Scientific Or Technical Report (MAY 1995)
- 252.242-7000 - Post Award Conference (DEC 1991)

- 252.242-7004 - Material Management And Accounting System (SEP 1996)
- 252.243-7002 - Requests for Equitable Adjustment (MAR 1998)
- 252.245-7001 - Reports of Government Property (MAY 1994)
- 252.247-7023 - Transportation Of Supplies By Sea (NOV 1995)
- 252.247-7024 - Notification Of Transportation Of Supplies By Sea (NOV 1995)
(will be included if the successful offeror made a negative response to the inquiry at DFARS 252.247-7022)
- 252.251-7000 - Ordering From Government Supply Sources (MAY 1995)

I-2 FAR 52.223-11 - OZONE-DEPLETING SUBSTANCES (JUN 1996)**(a) Definitions.**

"Ozone-depleting substance", as used in this clause, means any substance designated as Class I by the Environmental Protection Agency (EPA) (40 CFR Part 82), including but not limited to chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or any substance designated as Class II by EPA (40 CFR Part 82), including but not limited to hydrochlorofluorocarbons.

(b) The Contractor shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), and (d) and 40 CFR Part 82, Subpart E, as follows:

"WARNING: Contains (or manufactured with, if applicable) _____, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere."

* The Contractor shall insert the name of the substance(s).

I-3 FAR 52.216-18 ORDERING (OCT 1995)

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from the date of contract award through one year thereafter. In the event the options are exercised, orders may be issued from the effective date of the exercise of the option through two years thereafter.

(b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.

(c) If mailed, a delivery order or task order is considered "issued" when the Government deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods only if authorized in the Schedule.

I-4 FAR 52.216-19 ORDER LIMITATIONS (OCT 1995)

(a) *Minimum order.* When the Government requires supplies or services covered by this contract in an amount of less than 1040 hours, the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.

(b) *Maximum order.* The Contractor is not obligated to honor -

(1) Any order for a single item in excess of 36,400 hours for the base year, or

(2) Any order for a combination of items in excess of 36,400 hours.

(3) A series of orders from the same ordering office within 90 days that together call for quantities exceeding the limitation in subparagraph (1) or (2) above.

(c) If this is a requirements contract (i.e., includes the Requirements clause at subsection 52.216-21 of the Federal Acquisition Regulation (FAR)), the Government is not required to order a part of any one requirement from the Contractor if that requirement exceeds the maximum-order limitations in paragraph (b) above.

(d) Notwithstanding paragraphs (b) and (c) of this section, the Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within 30 days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

I-5 FAR 52.216-22 INDEFINITE QUANTITY (OCT 1995)

(a) This is an indefinite-quantity contract for the supplies or services specified, and effective for the period stated, in the Schedule. The quantities of supplies and services specified in the Schedule are estimates only and are not purchased by this contract.

(b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the "maximum". The Government shall order at least the quantity of supplies or services designated in the Schedule as the "minimum".

(c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; provided, that the Contractor shall not be required to make any deliveries under this contract after 60 days after the end of the effective period of this contract.

PART III - LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS

SECTION J

LIST OF ATTACHMENTS

- J-1** Attachment (1) - Statement Of Work – 3 Pages, With Exhibit A, (DD Form 1423) Contract Data Requirements And Enclosure (1) - Instructions For Distribution-1 Page.
- J-2** Attachment (2) - DD 254, Contract Security Classification Specification Form Ser 071-98 Dated 30 DEC 98 – 2 pages.
- J-3** Attachment (3) – List of Government Furnished Special Test Equipment – 2 pages.
- J-4** Attachment (4) – Qualifications of Personnel – 1 page.

PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION - K

REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS OR RESPONDENTS

- K-1** Representations, Certifications, and Other Statements of Offerors or

Respondents

Each Offeror must submit a completed Representations, Certifications, and Other Statements Of Offerors or Respondents with their proposal which is available electronically in full text at <http://heron.nrl.navy.mil/contracts/rep&certs.htm>

K-2 FILL IN FOR FAR 52.219-1 - SMALL BUSINESS PROGRAM REPRESENTATIONS (OCT 1998)

The fill in information is as follows:

The standard industrial classification (SIC) code for this acquisition is 8731.

The small business size standard is 500 employees.

K-3 COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING

The Offeror's CAGE Code is {fill-in}_____.

See DFARS 252.204-7001 in Section L for procedures on requesting a CAGE Code.

SECTION L INSTRUCTIONS CONDITIONS AND NOTICES TO OFFERORS OR RESPONDENTS

L-1 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>

<http://heron.nrl.navy.mil/contracts/home.htm>

FAR CLAUSE	TITLE
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52.204-6	- Data Universal Numbering System (DUNS) Number (APR 1998)
52.214-34	- Submission Of Offers In The English Language (APR 1991)
52.214-35	- Submission Of Offers In U.S. Currency (APR 1991)
52.215-1	- Instructions to Offerors- Competitive Acquisition (OCT 1997)
52.215-5	- Facsimile Proposals (OCT 1997)
52.215-16	- Facilities Capital Cost Of Money (OCT 1997)

- 52.237-1 - Site Visit (APR 1984)
- 52.252-5 - Authorized Deviations in Provisions (APR 1984)

L-2 FAR 52.211-14 - NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be a ☐ DX rated order; ☒ DO rated order certified for national use under the Defense Priorities and Allocations system (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation.

L-3 FAR 52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997)

(a) *Exceptions from cost or pricing data.* (1) In lieu of submitting cost or pricing data, offerors may submit a written request for exception by submitting the information described in the following subparagraphs. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an exception should be granted, and whether the price is fair and reasonable.

(i) *Identification of the law or regulation establishing the price offered.* If the price is controlled under law by periodic rulings, reviews, or similar actions of a governmental body, attach a copy of the controlling document, unless it was previously submitted to the contracting office.

(ii) *Commercial item exception.* For a commercial item exception, the offeror shall submit, at a minimum, information on prices at which the same item or similar items have previously been sold in the commercial market that is adequate for evaluating the reasonableness of the price for this acquisition. Such information may include--

(A) For catalog items, a copy of or identification of the catalog and its date, or the appropriate pages for the offered items, or a statement that the catalog is on file in the buying office to which the proposal is being submitted. Provide a copy or describe current discount policies and price lists (published or unpublished), e.g., wholesale, original equipment manufacturer, or reseller. Also explain the basis of each offered price and its relationship to the established catalog price, including how the proposed price relates to the price of recent sales in quantities similar to the proposed quantities.

(B) For market priced items, the source and date or period of the market quotation or other basis for market price, the base amount, and applicable discounts. In addition, describe the nature of the market.

(C) For items included on an active Federal Supply Service Multiple Award Schedule contract, proof that an exception has been granted for the schedule item.

(2) The offeror grants the Contracting Officer or an authorized representative the right to examine, at any time before award, books, records, documents, or other directly pertinent records to verify any request for an exception under this provision, and the reasonableness of price. For items priced using catalog or market prices, or law or regulation, access does not extend to cost or profit information or other data relevant solely to the offeror's determination of the prices to be offered in the catalog or marketplace.

(b) *Requirements for cost or pricing data.* If the offeror is not granted an exception from the requirement to submit cost or pricing data, the following applies:

(1) The offeror shall prepare and submit cost or pricing data and supporting attachments in accordance with Table 15-2 of FAR 15.408.

(2) As soon as practicable after agreement on price, but before contract award (except for unpriced actions such as letter contracts), the offeror shall submit a Certificate of Current Cost or Pricing Data, as prescribed in FAR 15.406-2.

L-4 FAR 52.216-1 - TYPE OF CONTRACT (APR 1984)

The Government contemplates award of an Indefinite Delivery Indefinite Quantity type contract with Cost Plus Fixed Fee term form delivery orders resulting from this solicitation.

L-5 FAR 52.233-2 - SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in Section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO) shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from the Control Desk, Code 3200, Bldg. 222, Rm. 115, Naval Research Laboratory, 4555 Overlook Ave., S.W., Washington DC 20375-5326.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

L-6 DFARS 252.204-7001 - COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (DEC 1991)

- (a) The Offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter CAGE Before the number.
- (b) If the Offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Services Center (DLSC). The Contracting Officer will--
 - (1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of the Commercial and Government Entity (CAGE) Code;
 - (2) Complete section A and forward the form to DLSC; and
 - (3) Notify the Contractor of its assigned CAGE code.
- (c) Do not delay submission of the offer pending receipt of a CAGE code.

L-7 DFARS 252.227-7017 - IDENTIFICATION AND ASSERTION OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS (JUN 1995)

- (a) The terms used in this provision are defined in following clause or clauses contained in

this solicitation--

- (1) If a successful offeror will be required to deliver technical data, the Rights in Technical Data--Noncommercial Items clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.
 - (2) If a successful offeror will not be required to deliver technical data, the Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.
- (b) The identification and assertion requirements in this provision apply only to technical data, including computer software documents, or computer software to be delivered with other than unlimited rights. For contracts to be awarded under the Small Business Innovative Research Program, the notification requirements do not apply to technical data or computer software that will be generated under the resulting contract. Notification and identification is not required for restrictions based solely on copyright.
- (c) Offers submitted in response to this solicitation shall identify, to the extent known at the time an offer is submitted to the Government, the technical data or computer software that the Offeror, its subcontractors or suppliers, or potential subcontractors or suppliers, assert should be furnished to the Government with restrictions on use, release, or disclosure.
- (d) The Offeror's assertions, including the assertions of its subcontractors or suppliers or potential subcontractors or suppliers shall be submitted as an attachment to its offer in the following format, dated and signed by an official authorized to contractually obligate the Offeror:
- Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of Technical Data or Computer Software.
- The Offeror asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data or computer software should be restricted:

Technical Data or Computer Software Person to be Furnished With Restrictions*	Basis for Assertion** Restrictions****	Asserted Rights Category***	Name of Asserting
(LIST)*****.	(LIST)	(LIST)	(LIST)

- * For technical data (other than computer software documentation) pertaining to items, components, or processes developed at private expense, identify both the deliverable technical data and each such items, component, or process. For

computer software or computer software documentation identify the software or documentation.

** Generally, development at private expense, either exclusively or partially, is the only basis for asserting restrictions. For technical data, other than computer software documentation, development refers to development of the item, component, or process to which the data pertain. The Government's rights in computer software documentation generally may not be restricted. For computer software, development refers to the software. Indicate whether development was accomplished exclusively or partially at private expense. If development was not accomplished at private expense, or for computer software documentation, enter the specific basis for asserting restrictions.

*** Enter asserted rights category (e.g., government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited, restricted, or government purpose rights under this or a prior contract, or specially negotiated licenses).

**** Corporation, individual, or other person, as appropriate.

***** Enter "none" when all data or software will be submitted without restrictions.

Date

Printed Name and Title

Signature

(End of identification and assertion)

- (e) An offeror's failure to submit, complete, or sign the notification and identification required by paragraph (d) of this provision with its offer may render the offer ineligible for award.
- (f) If the Offeror is awarded a contract, the assertions identified in paragraph (d) of this provision shall be listed in an attachment to that contract. Upon request by the Contracting Officer, the Offeror shall provide sufficient information to enable the Contracting Officer to evaluate any listed assertion.

L-8 DFARS 252.227-7028 - TECHNICAL DATA OR COMPUTER SOFTWARE PREVIOUSLY DELIVERED TO THE GOVERNMENT (JUN 1995)

The Offeror shall attach to its offer an identification of all documents or other media incorporating technical data or computer software it intends to deliver under this contract with other than unlimited rights that are identical or substantially similar to documents or other media that the Offeror has produced for, delivered to, or is obligated to deliver to the Government under any contract or subcontract. The attachment shall identify - -

- (a) The contract number under which the data or software were produced;
- (b) The contract number under which, and the name and address of the organization to whom, the data or software were most recently delivered or will be delivered; and
- (c) Any limitations on the Government's rights to use or disclose the data or software, including, when applicable, identification of the earliest date the limitations expire.

L-9 GOVERNMENT-FURNISHED PROPERTY

No material, labor, or facilities will be furnished by the Government unless provided for in the solicitation. Notwithstanding this, all of the capacitor, transistor, and integrated circuit test structures required for this contract shall be provided by NRL personnel, or by other vendors under contract to the Government. The Contractor must execute such nondisclosure agreements as may be required by the vendors of the parts and structures under test. Other equipment may be provided as per Attachment No. 3 and Clause H-7. The Contractor should state in his proposal whether he intends to use his own equipment or the Government Furnished Equipment listed in Attachment No. 3.

L-10 INQUIRIES CONCERNING THE RFP

Any questions concerning the RFP must be submitted in writing to the Contracting Officer at the location noted in blocks 7 and 9 of the Standard Form 33, "Solicitation, Offer and Award," no less than fifteen (15) days before closing. The Government will not consider questions received after this date. Offerors are cautioned against directing any questions concerning this RFP to technical personnel at the Naval Research Laboratory.

L-11 INSTRUCTIONS FOR SUBMISSION AND INFORMATION REQUIRED TO EVALUATE PROPOSALS

(1) Information for the technical and management proposal shall be placed in Volume I and be completely separate from the cost proposal (Volume II).

(2) Proposal Identification/Mailing - The proposal should be packaged for delivery so as to permit safe and timely arrival at destination. The proposal package should be sent to the address shown in Block 7 of the RFP face page and marked:

Solicitation No. N00173-99-R-KK02**Closing Date:****(As specified in Block 9, RFP face page)****Attn: Code 3220.KK**

(3) Proposal Format and Length - No attempt is made to restrict the proposal format and style. However, the proposal should be written and organized so as to be compatible with the RFP, the Statement of Work, company's organization and accounting structure, and proposed cost estimate. Offerors are encouraged to use recycled paper and maximize the use of double sided copying when preparing responses to solicitations. The proposal length shall not exceed 50 pages including illustrations, charts, drawings, diagrams, etc.

(4) Include a matrix indicating proposed labor hours by skill category required to perform the statement of work. This matrix shall not contain labor rates or any other indication of price. This matrix shall be prepared in accordance with the information outlined in Section L-12 below.

(5) The following information is required for evaluation of your technical/management and cost proposal. Any additional information may be provided.

- a. The proposal shall reflect a thorough knowledge of semiconductor physics, particularly as applied to MOS devices, a working knowledge of the BASIC computer language, and sufficient familiarity with electronic instruments to enable contractor personnel to integrate them into working systems.
- b. The proposals shall identify the key and supporting personnel to be assigned to this program and describe their prior research experience and accomplishments on similar or related tasks by including resumes for key personnel. The key personnel assigned to this program shall have education and or experience appropriate to the assigned tasks. The minimum qualifications for the assigned tasks set forth in the Statement of Work are as outlined in Attachment No. 4
- c. The proposals shall describe the adequacy of company experience on similar or related research projects as evidenced by a narrative description of the experience. This should show clearly the relationship to this project and include details such as the methods used and the analytic results achieved, design codes developed and identify the sponsoring agency.
- d. The proposals shall identify and define the organizational lines of authority, responsibility and communication. The proposal should also show the proposed schedule, manpower level, and workload distribution.
- e. The proposals shall describe the experience the offeror has in the growth of

oxide films on silicon devices.

- f. The proposals shall describe the experience the offeror has in irradiating integrated circuits, MOS capacitors and transistors using Co-60, x rays, electrons, protons, and neutrons.
- g. The proposal shall describe the experience the offeror has in performing parametric measurements to characterize irradiated integrated circuits and to determine their response as a function of dose, dose rate, time and temperature.

VOLUME I - TECHNICAL/MANAGEMENT PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 5 COPIES

VOLUME II - COST PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 5 COPIES

The offeror shall submit a cost proposal with supporting information for each cost element consistent with offeror's cost accounting system. The supporting breakdown should include such elements as materials, direct labor, indirect cost, and other costs such as travel. The offeror shall provide exhibits as necessary to substantiate the cost elements. Should rates be used in the proposal which are not DCAA approved, the offeror shall provide complete documentation and the rationale for their use at time of proposal submission.

L-12 ANTICIPATED DISTRIBUTION OF DIRECT LABOR HOURS BY LABOR CATEGORIES

The following is the anticipated distribution by labor category of the maximum level of effort. This distribution shall be used by the offeror in preparing the cost proposal. If the offeror uses labor category terminology other than that used in this provision, the offeror must provide a matrix clearly relating their proposed labor categories to those in this provision.

SOW Task	First Year		Next 2 years		Last 2 years	
	PhD	Tech.	PhD	Tech	PhD	Tech
Task 2.1	1560		3120		3120	

Task 2.2	520	520	1040	1040	1040	1040
Task 2.3	1040	520	2080	1040	2080	1040
Task 2.4	650	260	1300	520	1300	520
Task 2.5	520	520	1040	1040	1040	1040
Task 2.6	390	260	780	520	780	520
Task 2.7	520		1040		520	1040

L-13 MAINTENANCE, SUPPLIES, AND CAPITAL EQUIPMENT

To minimize interruptions due to the failure of equipment or due to a shortage of specialized supplies used in this program, the Contractor will be authorized to expend funds not to exceed \$100,000/year, for the purchase of maintenance services, for the purchase of supplies and services required for the fabrication of testing fixtures, for the short term rental of instruments, for the purchase of specialized semiconductor materials, for the purchase of specialized silicon processing and for the purchase of specialized analysis services needed to carry out the requirements of the program.

SECTION M EVALUATION FACTORS FOR AWARD

M-1 EVALUATION

Award will be made to that offeror whose proposal is determined to be the best value to the Government, proposed cost and other factors considered. The Government reserves the right to make award to other than the low offeror. Although technical considerations are more important than cost, the closer the technical scores of the various proposals are to one another, the more important cost and the business factor considerations become.

M-2 EVALUATION FACTORS FOR AWARD

Proposals will be evaluated in accordance with the following criteria. The technical factor is more important than the cost category or the business category. The technical subfactors are listed in descending order of importance. Subfactors 1 and 2 are equal in value. Subfactors 3 and 4 are also equal in value.

M-2-1. TECHNICAL/MANAGEMENT

(1) QUALIFICATIONS

The proposals will be evaluated on the extent to which the proposed personnel meet the qualifications as described in Attachment No. 4 and on the past performance of key personnel.

(2) TECHNICAL MERIT

The proposals shall be evaluated on the extent to which the contractor demonstrates a complete understanding of the technical requirements of the solicitation. This understanding should include a thorough knowledge of semiconductor physics, particularly as applied to MOS devices, a working knowledge of the BASIC computer language, and sufficient familiarity with electronic instruments to enable contractor personnel to integrate them into working systems.

(3) MANAGEMENT

The proposals will be evaluated on the extent to which the organizational lines of authority, responsibility and communication are clear. The proposal shall also be evaluated on the extent to which the schedules and proposed manpower levels are reasonable and consistent with the work to be performed.

(4) COMPANY EXPERIENCE

The proposals shall be evaluated on the extent to which the Contractor has experience on similar or related research projects as evidenced by a narrative description of the experience. The narrative should clearly show the relationship of the previous experience to this project and include details such as the methods used and the analytic results achieved, design codes developed, and identify the sponsoring agency.

M-2-2. COST CATEGORY

(a) Cost To The Government

Proposed estimated cost to the Government.

The Government may adjust the proposed cost for purposes of evaluation based upon an evaluation of cost realism. Cost Realism means that the costs in an offeror's proposal are realistic for the work to be performed; reflect a clear understanding of the requirements; and are consistent with the various elements of the offeror's technical proposal. The cost realism evaluation includes an analysis of the adequacy of the hours, labor mix, and other direct costs to perform the work as proposed in the technical proposal as well as the proposed labor and indirect rates. It also includes evaluation of the likelihood that the risks inherent in the offeror's technical approach will result in higher actual costs than anticipated.

Statement of Work
For
Radiation Hardening of MOS Technology

1. INTRODUCTION/SCOPE. NRL is engaged in research and development programs which support the Defense Threat Reduction Agency's Radiation Tolerant Deep Sub-micron Very Large Scale Integrated Circuit Technology Development and the U.S. Air Force Research Laboratory's Commercial Radiation-Tolerant Deep Sub-micron Microelectronics DUAP. Studies of device processing and fabrication techniques and the impact of these techniques on radiation hardness are being conducted through in-house programs as well as through contracts with both universities and private industry. In addition, NRL monitors the performance of several DTRA VLSI contracts and has prime responsibility for evaluating the radiation hardness of test structures and circuits provided under these contracts.

The technologies involved include state-of-the-art NMOS, CMOS and CMOS/SOI (Silicon-on-Insulator). These technologies for producing radiation hard devices are usually based on techniques for compensating trapped holes in the oxide by electron traps at the Si/SiO₂ interface and/or in the oxide. These methods of masking one type of defect (hole traps) with another (electron traps) have been developed in a completely empirical manner and present many theoretical and practical problems. These problems and their potential solutions will be addressed by this contract.

The assessment of progress requires a variety of sophisticated measurements using computer-controlled instrumentation. Analysis of the data requires a considerable amount of operator insight and interaction. Because of the dynamic nature of this field, it will be necessary to develop and/or modify these programs and systems in order to perform the full range of testing required for evaluating VLSI devices.

An extremely important part of the effort is the acquisition of large amounts of data on the radiation response of a wide variety of CMOS devices and circuits. The acquisition of this data requires the use of several highly sophisticated pieces of computer controlled equipment. Techniques implemented using this equipment include charge pumping, transistor transfer curves and Capacitance-Voltage curves. The resulting data must then be analyzed to obtain interface state densities, threshold voltage, flatband voltage, and other parameters relevant to the radiation response of the CMOS test structures. The equipment needed, the parameters to be measured, and the computer programs used for data acquisition and analysis, are always subject to change, improvement, and updating.

2. TASKS. The contractor's efforts shall include, but are not limited to the following tasks:

- 2.1 Use oxidation kinetics to examine defects such as Si-Si bonds in beam synthesized oxides such as SIMOX. The Si-Si defect is related to shallow electron traps, which degrade buried
- 2.2 oxide radiation hardness. The goal is to reduce Si-Si bond density for reduced leakage currents and increased buried oxide radiation hardness. This will be accomplished by development of processing techniques to remove or ameliorate Si-Si bond defects such as supplemental O₂ implants. The goal is to obtain material with a threshold voltage shift of less than 10V at 1 Mrad(SiO₂). Radiation test data, spectroscopic ellipsometry data, ESR data, and the literature will be analyzed to create and verify models of the buried oxide system in SOI materials.
- 2.2 Irradiate ICs, MOS capacitors, and transistors, using ⁶⁰Co gamma rays, X-rays, electrons, protons, neutrons, and/or other energetic particles as required to evaluate total ionizing dose, dose rate and single event effects. Perform temperature bias testing on irradiated ICs, MOS capacitors and transistors. Design and fabricate electrical and mechanical test jigs to perform these tests.
- 2.3 Perform computer controlled charge pumping, Capacitance-Voltage, Current-Voltage, Conductance-Voltage, and leakage current measurements to characterize MOS capacitors, FETs, ICs, memories, and other test structures to determine their response to radiation as a function of dose, dose-rate, time and temperature. The data collected shall be stored on disk for future reference and analysis. The data shall be reduced and analyzed to determine parameters such as threshold voltage shift, trapped oxide charge density, interface state density, and oxide defect density as a function of total dose, dose-rate and device processing conditions. The data shall be used to develop and verify models to explain the observed phenomena. The analyzed data will be displayed in tables and graphs as appropriate, with conclusions drawn as to the significance of the work
- 2.4 Write the computer programs necessary to conduct computer controlled electrical characterization measurements and to perform data acquisition and analysis. Modify existing computer programs or develop new ones to implement new measurement techniques and meet new requirements. Data storage protocols and formats must be compatible with the existing system.
- 2.5 Prepare reduced and analyzed data in a form suitable for presentation at briefings and conferences. This shall include, but is not limited to camera ready copies of annotated plots, charts, tables, explanatory material in bullet form, and written reports.
- 2.6 Document in writing with block diagrams, flow charts and commented listings, all test procedures and computer programs used or developed under this contract so that persons unfamiliar with the tests can do them successfully.

2.7 Contractor personnel shall present the results of their work at various meetings and conferences when appropriate if and only if given prior approval by the COTR or his representative.

3. **DELIVERABLES.** The contractor shall provide the following in accordance with the attached DD Form 1423.

3.1 All materials provided to the contractor for test, irradiation, processing, mounting, bonding, etc., in connection with this contract, shall be returned to NRL after complying with the requirements of the contract as stated in the above tasks.

3.2 All computer codes and user manuals including block diagrams, flow charts and commented listings for all software generated or modified in this program.

3.3 Documents describing all test procedures used or developed under this program so that persons unfamiliar with the tests can do them successfully. Experimental data and data in a form suitable for presentation at briefings and conferences. This shall include, but is not limited to presentation as written reports, annotated plots and graphs, charts, tables, and explanatory material in bullet form.

3.4 Due to the complex nature of the work, and the rapidly changing testing requirements, weekly progress reviews at NRL with the program manager and key personnel are required.

3.5 Monthly status reports detailing man hours and funds expended. This report shall be in letter form and shall state the expenditure of funds under each category in the contract, the funds remaining, and an estimate of the cost to complete the contract.

3.6 Annual report describing accomplishments, conclusions, and recommendations for further efforts.

CONTRACT DATA REQUIREMENTS LIST

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 440 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO. 0002				B. EXHIBIT A		C. CATEGORY: TDP _____ TM _____ OTHER _____																			
D. SYSTEM / ITEM				E. CONTRACT / PR NO.		F. CONTRACTOR																			
1. DATA ITEM NO. A001		2. TITLE OF DATA ITEM Progress Report				3. SUBTITLE																			
4. AUTHORITY (Data Acquisition Document No.)				5. CONTRACT REFERENCE SOW Para 3.3		6. REQUIRING OFFICE NRL Code 6816																			
7. DD 250 REQ No		9. DIST STATEMENT REQUIRED		10. FREQUENCY MNTHLY		12. DATE OF FIRST SUBMISSION 45 DAC		14. DISTRIBUTION																	
8. APP CODE				11. AS OF DATE 30 DAC		13. DATE OF SUBSEQUENT SUBMISSION ea. 30 days thereafter		<table border="1"> <tr> <th colspan="2">a. ADDRESSEE</th> <th colspan="2">b. COPIES</th> </tr> <tr> <th>Draft</th> <th>Final</th> <th>Reg</th> <th>Repro</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>		a. ADDRESSEE		b. COPIES		Draft	Final	Reg	Repro								
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16. REMARKS This report is to contain all electrical experiemental data, failure analysis data and computer modeling results.						<table border="1"> <tr> <td>NRL 6810</td> <td></td> <td>1</td> <td>0</td> </tr> <tr> <td>NRL 6816</td> <td></td> <td>2</td> <td>0</td> </tr> <tr> <td colspan="2">15. TOTAL</td> <td>3</td> <td>0</td> </tr> </table>				NRL 6810		1	0	NRL 6816		2	0	15. TOTAL		3	0				
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4. AUTHORITY (Data Acquisition Document No.)				5. CONTRACT REFERENCE SOW, Para 3.4		6. REQUIRING OFFICE NRL Code 6816																			
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Draft	Final	Reg	Repro																						
16. REMARKS This is an oral presentaion to key NRL personnel by the contractor's program manager and key personnel. It is accompanied by supporting visuals and covers progress made during the past week and plans for work in the coming week.						<table border="1"> <tr> <td>NRL Code 6810</td> <td></td> <td>1</td> <td>0</td> </tr> <tr> <td>NRL Code 6816</td> <td></td> <td>2</td> <td>0</td> </tr> <tr> <td colspan="2">15. TOTAL</td> <td>3</td> <td>0</td> </tr> </table>				NRL Code 6810		1	0	NRL Code 6816		2	0	15. TOTAL		3	0				
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4. AUTHORITY (Data Acquisition Document No.)				5. CONTRACT REFERENCE SOW, Para 3.5		6. REQUIRING OFFICE NRL Code 6816																			
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16. REMARKS This report is to contain expenditures of dollars and hours committed to date of report and estimated cost to complete contract.						<table border="1"> <tr> <td>NRL Code 6800 B</td> <td></td> <td>1</td> <td>0</td> </tr> <tr> <td>NRL Code 6810</td> <td></td> <td>1</td> <td>0</td> </tr> <tr> <td>NRL Code 6816</td> <td></td> <td>2</td> <td>0</td> </tr> <tr> <td colspan="2">15. TOTAL</td> <td>4</td> <td>0</td> </tr> </table>				NRL Code 6800 B		1	0	NRL Code 6810		1	0	NRL Code 6816		2	0	15. TOTAL		4	0
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NRL Code 6816		2	0																						
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1. DATA ITEM NO. A004		2. TITLE OF DATA ITEM Annual Technical Report				3. SUBTITLE																			
4. AUTHORITY (Data Acquisition Document No.)				5. CONTRACT REFERENCE SOW, Para 3.6		6. REQUIRING OFFICE NRL Code 6816																			
7. DD 250 REQ No		9. DIST STATEMENT REQUIRED		10. FREQUENCY OTIME		12. DATE OF FIRST SUBMISSION 395 DAC		14. DISTRIBUTION																	
8. APP CODE				11. AS OF DATE 365 DAC		13. DATE OF SUBSEQUENT SUBMISSION		<table border="1"> <tr> <th colspan="2">a. ADDRESSEE</th> <th colspan="2">b. COPIES</th> </tr> <tr> <th>Draft</th> <th>Final</th> <th>Reg</th> <th>Repro</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>		a. ADDRESSEE		b. COPIES		Draft	Final	Reg	Repro								
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16. REMARKS This report will document all efforts and results on the program. Reports shall include information set forth in paragraph 3.1 through 3.6 of the Statement of Work.						<table border="1"> <tr> <td>NRL Code 6810</td> <td></td> <td>1</td> <td></td> </tr> <tr> <td>NRL Code 6816</td> <td></td> <td>2</td> <td>4</td> </tr> <tr> <td colspan="2">15. TOTAL</td> <td>2</td> <td>5</td> </tr> </table>				NRL Code 6810		1		NRL Code 6816		2	4	15. TOTAL		2	5				
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G. PREPARED BY Hani M. King				H. DATE 1/4/99		I. APPROVED BY		J. DATE																	

17. PRICE GROUP
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**ENCLOSURE (1) TO DD FORM 1423
INSTRUCTIONS FOR DISTRIBUTION**

DISTRIBUTION OF TECHNICAL REPORTS

The minimum distribution of **technical reports** and the **final report** submitted in connection with this contract is as follows:

ADDRESSEE	DODAAD CODE	NUMBER OF COPIES	
		UNCLASSIFIED/ UNLIMITED	UNCLASSIFIED/LIMITED AND CLASSIFIED
COR Naval Research Laboratory Code: 4555 Overlook Ave., S.W. Washington, DC 20375-5320	N00173	1	1
Administrative Contracting Officer		1	1
Director Naval Research Laboratory ATTN: Code: 5227 4555 Overlook Ave., S.W. Washington, DC 20375-5326	N00173	1	1
Defense Technical Information Center (DTIC) 8725 John J. Kingman Rd. Suite #0944 Fort Belvoir, VA 22060-6218	S47031	4	2

DISTRIBUTION OF NON-TECHNICAL REPORTS

The minimum distribution of non-technical reports submitted in connection with this contract is as follows:

ADDRESSEE	DODAAD CODE	NUMBER OF COPIES	
		UNCLASSIFIED/ UNLIMITED	UNCLASSIFIED/LIMITED AND CLASSIFIED
COR	N00173	1	1
Administrative Contracting Officer (DCMAO)		1	1

DEPARTMENT OF DEFENSE CONTRACT SECURITY CLASSIFICATION SPECIFICATION <i>(The requirements of the DoD Industrial Security Manual apply to all security aspects of this effort.)</i>				1. CLEARANCE AND SAFEGUARDING SER: 071-98 a. FACILITY CLEARANCE REQUIRED SECRET b. LEVEL OF SAFEGUARDING REQUIRED SECRET																																																																																																																	
2. THIS SPECIFICATION IS FOR: (X and complete as applicable)				3. THIS SPECIFICATION IS: (X and complete as applicable)																																																																																																																	
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b. SUBCONTRACT NUMBER				b. REVISED (Supersedes all previous specs) Revision No. Date (YYMMDD)																																																																																																																	
X c. SOLICITATION OR OTHER NUMBER 68-1008-99		Due Date (YYMMDD)		c. FINAL (Complete Item 5 in all cases) Date (YYMMDD)																																																																																																																	
4. IS THIS A FOLLOW-ON CONTRACT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO. If Yes, complete the following: Classified material received or generated under _____ (Preceding Contract Number) is transferred to this follow-on contract.																																																																																																																					
5. IS THIS A FINAL DD FORM 254? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO. If Yes, complete the following: In response to the contractor's request dated _____, retention of the identified classified material is authorized for the period of _____.																																																																																																																					
6. CONTRACTOR (Include Commercial and Government Entity (CAGE) Code) a. NAME, ADDRESS, AND ZIP CODE <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">FOR RFP PURPOSES ONLY, NOT VALID FOR ACTUAL CONTRACT AWARD.</div> b. CAGE CODE c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code)																																																																																																																					
7. SUBCONTRACTOR a. NAME, ADDRESS, AND ZIP CODE N/A b. CAGE CODE c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code) N/A																																																																																																																					
8. ACTUAL PERFORMANCE a. LOCATION N/A b. CAGE CODE c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code) N/A																																																																																																																					
9. GENERAL IDENTIFICATION OF THIS PROCUREMENT <div style="border: 1px solid black; padding: 10px; margin-top: 10px;">RADIATION HARDENING OF MOS TECHNOLOGY</div>																																																																																																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">10. THIS CONTRACT WILL REQUIRE ACCESS TO:</th> <th>YES</th> <th>NO</th> <th colspan="2">11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:</th> <th>YES</th> <th>NO</th> </tr> <tr> <td>a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION</td> <td></td> <td></td> <td>X</td> <td>a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>b. RESTRICTED DATA</td> <td></td> <td></td> <td>X</td> <td>b. RECEIVE CLASSIFIED DOCUMENTS ONLY</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION</td> <td></td> <td></td> <td>X</td> <td>c. RECEIVE AND GENERATE CLASSIFIED MATERIAL</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>d. FORMERLY RESTRICTED DATA</td> <td></td> <td></td> <td>X</td> <td>d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>e. INTELLIGENCE INFORMATION:</td> <td></td> <td></td> <td></td> <td>e. PERFORM SERVICES ONLY</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>(1) Sensitive Compartmented Information (SCI)</td> <td></td> <td></td> <td>X</td> <td>f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>(2) Non-SCI</td> <td></td> <td></td> <td>X</td> <td>g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>f. SPECIAL ACCESS INFORMATION</td> <td></td> <td></td> <td>X</td> <td>h. REQUIRE A COMSEC ACCOUNT</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>g. NATO INFORMATION</td> <td></td> <td></td> <td>X</td> <td>i. HAVE TEMPEST REQUIREMENTS</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>h. FOREIGN GOVERNMENT INFORMATION</td> <td></td> <td></td> <td>X</td> <td>j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>i. LIMITED DISSEMINATION INFORMATION</td> <td></td> <td></td> <td>X</td> <td>k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>j. FOR OFFICIAL USE ONLY INFORMATION</td> <td></td> <td>X</td> <td></td> <td>l. OTHER (Specify)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>k. OTHER (Specify)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						10. THIS CONTRACT WILL REQUIRE ACCESS TO:		YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:		YES	NO	a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION			X	a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY			X	b. RESTRICTED DATA			X	b. RECEIVE CLASSIFIED DOCUMENTS ONLY			X	c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION			X	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL		X		d. FORMERLY RESTRICTED DATA			X	d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE			X	e. INTELLIGENCE INFORMATION:				e. PERFORM SERVICES ONLY			X	(1) Sensitive Compartmented Information (SCI)			X	f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES			X	(2) Non-SCI			X	g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER			X	f. SPECIAL ACCESS INFORMATION			X	h. REQUIRE A COMSEC ACCOUNT			X	g. NATO INFORMATION			X	i. HAVE TEMPEST REQUIREMENTS			X	h. FOREIGN GOVERNMENT INFORMATION			X	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS			X	i. LIMITED DISSEMINATION INFORMATION			X	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE			X	j. FOR OFFICIAL USE ONLY INFORMATION		X		l. OTHER (Specify)				k. OTHER (Specify)							
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12. PUBLIC RELEASE. Any information (classified or unclassified) pertaining to this contract shall not be released for public dissemination except as provided by the Industrial Security Manual or unless it has been approved for public release by appropriate U.S. Government authority. Proposed public releases shall be submitted for approval prior to release.

☐ Direct ☒ Through (Specify):

Commanding Officer, Naval Research Laboratory, Washington, DC 20375-5320, Code 6816.

to the Directorate for Freedom of Information and Security Review, Office of the Assistant Secretary of Defense (Public Affairs)* for review.
* In the case of non-DoD User Agencies, requests for disclosure shall be submitted to that agency.

13. SECURITY GUIDANCE. The security classification guidance needed for this classified effort is identified below. If any difficulty is encountered in applying this guidance or if any other contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes; to challenge the guidance or the classification assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending final decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. (Fill in as appropriate for the classified effort. Attach, or forward under separate correspondence, any documents/guides/extracts referenced herein. Add additional pages as needed to provide complete guidance.)

Access to classified information is not required for the purpose of submitting a bid/proposal for this statement of work. However, prior to award of contract, the successful contractor will be required to have a SECRET facility clearance, SECRET storage capabilities, and personnel available with DoD granted personnel security clearances commensurate with level of access required for performance of contract.

1998 DEC 30 P 2:31
HRL CONTRACTS
DIVISION

14. ADDITIONAL SECURITY REQUIREMENTS. Requirements, in addition to ISM requirements, are established for this contract. (If Yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.)

☐ Yes ☒ No

15. INSPECTIONS. Elements of this contract are outside the inspection responsibility of the cognizant security office. (If Yes, explain and identify specific areas or elements carved out and the activity responsible for inspections. Use Item 13 if additional space is needed.)

☐ Yes ☒ No

16. CERTIFICATION AND SIGNATURE. Security requirements stated herein are complete and adequate for safeguarding the classified information to be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL

TINA SMALLWOOD

b. TITLE

Contracting Officer, Security

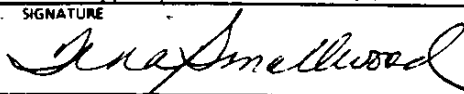
c. TELEPHONE (Include Area Code)

(202)767-2240/2521

d. ADDRESS (Include Zip Code)

Naval Research Laboratory
4555 Overlook Ave., SW
Washington, DC 20375-5320

e. SIGNATURE



17. REQUIRED DISTRIBUTION

- ☒ a. CONTRACTOR
☐ b. SUBCONTRACTOR
☒ c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR
☐ d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION
☐ e. ADMINISTRATIVE CONTRACTING OFFICER
☒ f. OTHERS AS NECESSARY 1221.11, 6816, 6802

Solicitation N00173-99-R-KK02**Attachment No. 3****Page 1 of 2 Page****Government Furnished Special Test Equipment**

Description	NRL Number	Est. Cost	Serial Number	SFA ID No.
Acopian Power Supply	N/A	500	M-K20D25	1001
Acopian Power Supply		500	M-K20D25	1061
Acopian Power Supply		500	M-K20D25	1062
Acopian Power Supply		135	K20D50	1086
Alps Dot Matrix Printer P2000G	363202	528	6A61006784	1002
Aracor 4100 X-ray Irradiation Source	347294	65,000	M-4100	1003
Aracor 4100 X-ray Irradiation Source		293,000	15086	1087
Aracor 4100 Power Pack				1088
Aracor 4100 Transformer Mod 30				1090
Aracor 4100 Prober				1091
Temptronics Controller Unit				1092
Temptronics Heat/Cool System				1093
Bausch & Lomb Microscope	340772	5,000	S-1662	1005
Bausch & Lomb Microscope	340131	5,000	S-1662	1005
Bicron M86 Surveyor 200A		500	1012007	5022
Bicron M86 Surveyor 200A		500	A664H	1029
Bicron M92 SWGM Probe		125	1050000	5023
Bicron M92 SWGM Probe		125	1050000	1018
Bicron Surveyor 50	398909	405	A987V	
Epson Printer	347308	300		1006
Fluke 27 Multimeter	N/A	300	S-3995012	1007
Fluke 8020A Multimeter	N/A	300	S-2161337	1008
Gast Pump	N/A	1,500	M-DOAP104AA	1009
Gast Pump		1,500	M-DOAP104AA	1060
Gast Pump		90	0787	1080
Gast Pump		90	0498	1095
HP 3435A Digital Multimeter	340764	700	1606A04172	1084
HP 4140B pA Meter	324386	10,000	S-0481	1010
HP 4140B pA Meter	347314	10,000	S-2034J00158	1011
HP 4274A LCR Meter	347313	10,000		1012
HP 4275 LCR Meter	324430	12,000	S-2517J03415	1014
HP 6002A Power Supply	N/A	1,500	S-2113A05364	1015
HP 7470 Plotter	375078	1,100	A-2517A20492	1016
HP 8112A Pulse Generator	377757	5,000	S-2522G0403	1017
HP 9000 Series 300 Controller	375166	6,000		1021
HP 9000 Series 300 Controller	362587	6,000		1022
HP 9153 Disc Drive	375124	2,000		1024
HP 9153 Disc Drive	377825	2,000	S-2515A15706	1025
HP 9826 Controller	347298	13,000	S-2205A02406	1026
HP ABC Switch		550	S-114354	1039
HP ABC Switch		550	S-114519	1044
HP Laser Printer 33440A	396150	1,800	2928J81332	1079
HP Power Supply	362082	200		1048
HP Power Supply	376909	200		1047
HP ThinkJet	375421	500		1027
HP ThinkJet	375123	500	S-2632530026	1028
HP 16023B Bias Controller	324110	300	S-1841J01298	1067

HP 7550A Graphics Plotter	367025	3,000	S-2725A60493	1068
HP Vectra Computer QS20	396363	6,500	2927A03192	1069
HP Monitor D1182A	396362	N/A	8619J6704	1070
HP Dual Disc Drive 9122D		931	2614A79984	1071
HP Dual Disc Drive		931	2614A79984	5024
ICS Elec. Modem 4834				1089
Keithley 617 Electrometer	376138	4,000		1030
Keithley 595 Quasistatic CV Meter	364202	295		1102
MOSAID SRT1	324246	12,000	M-SRT1	1065
NesLab CoolFlow	375496	5,000	M-HX105	1031
NesLab HX150		2,300	86EML26310-1	1081
Phillips 3100 X-ray Generator	347300	20,000	S-1267	1033
Tektronix 2235 Oscilloscope	361869	3,000	S-B021339	1034
Device Measurement Box		1,000		1049
Equipment Storage Cabinet		300		1050
1 System Work Station		2,000		1041
1 Table		500		1059
Weller Soldering Station		200	S-6816	1042
Work Station		300		1051
Equipment Rack		1,000		1040
Equipment Rack		1,000		1043
3 Lab Chairs		900		1056-57-58
Dry Erase Board		100		1046
Eventide Expressway Upgrade to 1M		900		1072
Eventide Expressway Upgrade to 1M		900		5008
Eventide Expressway 1MB Buffer/Spooler		2,195	26060	5003
Eventide Expressway 1MB Buffer/Spooler		2,195		1073
Eventide Expressway 1MB Buffer/Spooler		2,195		1101
Desk Phone 3825		105		1074
Desk Phone 3825		105		1075
Wall Phone 3823		105		1076
Wall Phone 3823		105		1077
Wall Phone 3823		105		1078
Work Bench 10 Drawer		200		1103
Work Bench 10 Drawer		200		1104
Utility Cabinet		100		1096

Personnel Qualifications

Proposals should identify the key and supporting personnel to be assigned to this project and describe their prior research experience and accomplishments on similar or related projects. The key personnel assigned to this project shall have education and or experience appropriate to the assigned tasks. The technical complexity of this program requires a thorough knowledge of semiconductor physics, particularly as applied to metallic oxide semiconductor (MOS) devices, experience writing and maintaining large BASIC and Visual BASIC computer codes, and sufficient familiarity with electronic instruments to enable contractor personnel to integrate them into working systems. The minimum qualifications for the assigned tasks as set forth in the Statement of Work are as follows:

- a. For Task 2.1, a PhD or equivalent in a field appropriate to the task, such as physics or electrical engineering, is required. Extensive knowledge and experience in the physics of MOS devices should be demonstrated by publication in the area of silicon and/or silicon oxide, interface studies, and by reputation and recognition in the industry.
- b. Tasks 2.2 – 2.6 require electronic technicians, and PhD or equivalent electronic engineers or physicists with the knowledge and ability to understand electronic instrumentation as used in the measurement of the physical parameters of MOS capacitors and transistors. This shall include the ability to integrate these instruments into a working system via the IEEE-488 interface and the associated computer. At least one of the persons assigned to these tasks should have demonstrated the ability to organize, write, and maintain large computer programs to perform electrical characterization. The PhD assigned to these tasks should have the demonstrated ability to integrate the measurements and experimental data to develop and verify models to explain the experimental results obtained.

It is essential that the continuity of this program be maintained. To ensure that no untimely interruptions occur, the contractor shall have sufficient depth of qualified personnel that a substitution can be made on short notice if the person assigned should leave.